Climate action and health: opportunities for collaboration

City of London Health and Wellbeing Board 24 Nov 2023

OUTLINE OF THIS SESSION

1.	Context - climate and health a. Impacts of the climate crisis on population health b. Climate action and health co-benefits	Jayne Taylor, Consultant in Public Health (City & Hackney Public Health Team)
2.	Local action on climate change a. City of London Climate Action Strategy - update b. NHS NEL Sustainability Plans - update	Tim Munday, Lead Environmental Resilience Officer (City of London Corporation) Rebecca Waters, Deputy Programme Manager Net Zero & Anchor Organisations (North East London Health & Care Partnership)
3.	Opportunities for (further) local collaboration	All

DRIVERS OF POPULATION HEALTH (a reminder)

Adapted from Dahlgren & Whitehead (1991)

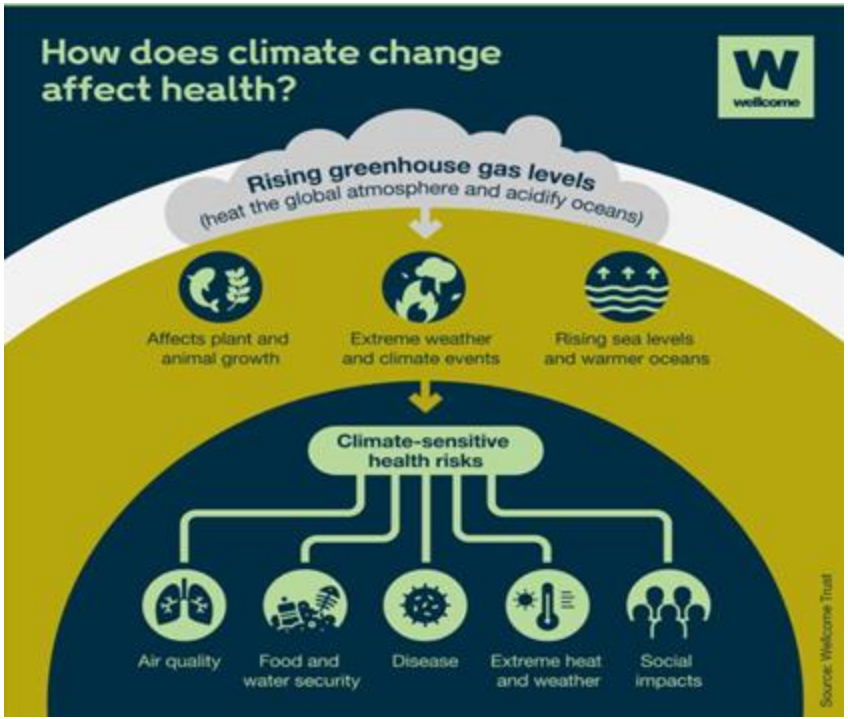
DEFINING CLIMATE CHANGE

“A change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer”

(Intergovernmental Panel on Climate Change)

1a. IMPACTS OF THE CLIMATE CRISIS ON POPULATION HEALTH

HOW DOES THE CLIMATE CRISIS AFFECT HEALTH?



Direct effects of extreme weather events (e.g. flood damage, storm vulnerability, heat stress)

Indirect effects:

- Mediated by natural systems (e.g. allergens, changing distribution of disease vectors, increased water/air pollution)
- Mediated by social systems (e.g. food production/distribution, mental stress, violence or mass refugee flows, health and care facilities/systems)

AIR QUALITY

- Increase in allergens, harmful pollutants, and extended pollen seasons = more frequent & severe allergic reactions or asthma episodes
- More/larger wildfires = reduced air quality and increased smoke exposure = increase in respiratory & cardiovascular admissions
- Burning fossil fuels increases air pollution (as well as climate change) = chronic heart and lung conditions linked to prolonged exposure

FOOD & WATER

- Rising temperatures boost evaporation and affect rainfall patterns - implications for water supply + affects conditions for crop and livestock farming
- Loss of food production increases risk of undernutrition and consequent disease/deaths
- Warmer climates an ideal environment for food and water-borne diseases (including diarrhoeal illness) to thrive

EXTREME HEAT & WEATHER EVENTS

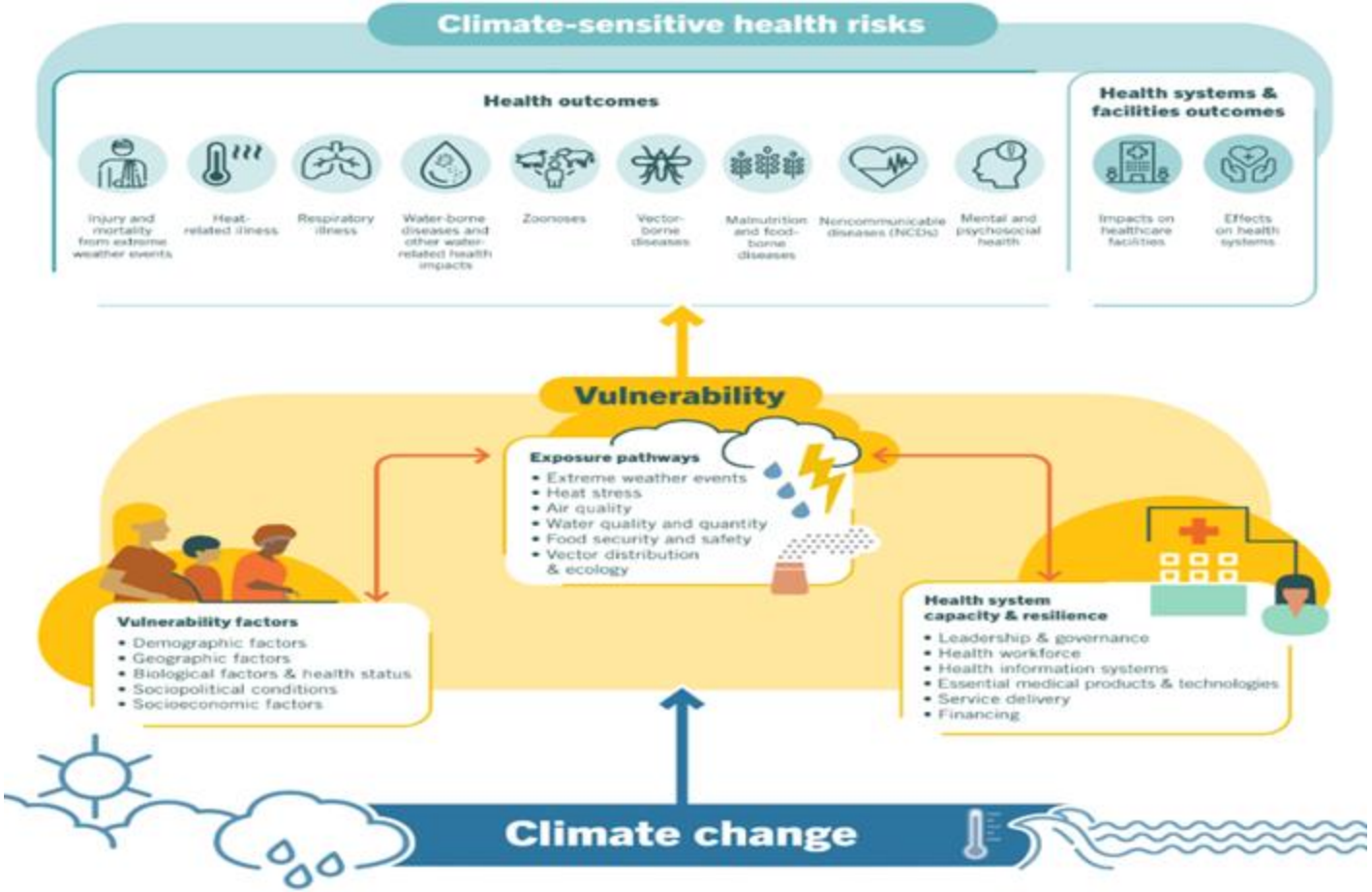
- Increasing severity and frequency of droughts, floods and heatwaves
- Increase in heat-related illness and death (maybe offset by reduction in cold-related deaths) *3,271 heatwave related excess deaths in England & Wales in 2022*
- Increase in skin cancer set to continue - *malignant melanoma ↑78% among males/48% among females 2003-2012*
- Growing evidence of extreme heat risks to maternal and neonatal health, mental health and non-communicable diseases (such as diabetes and asthma)
- Flood-related injury, infection and displacement - significant and lasting mental health impacts *1 in 6 properties in England at risk of flooding (2015)*

VECTOR-BORNE DISEASE

- Climate, temperature, precipitation and humidity all affect the lifecycle of disease vectors and infectious agents they carry
- Newly emerging diseases in tropical regions = global health risk
- Increased reporting of *ixodes ricinus* (sheep/deer tick) in Europe - a vector of Lyme disease
- Climate modelling suggests mosquitos could become established in the UK with associated risks of dengue virus, malaria etc (already appearing in Southern Europe)

OTHER SOCIAL IMPACTS

- Increasing temperatures adversely affect occupational health (especially for outdoor workers) and economic productivity
- Business and school closures, transport disruption and health system impact from extreme weather events
- Droughts and damage to ecosystems are significant drivers for population migration and conflict



Source: [The health argument for climate action](), COP26 Special Report (WHO, 2021)

HEALTH IMPACTS OF CLIMATE CHANGE

SKIN HEALTH

Climate change have likely contributed to increasing incidence of **cutaneous malignancy** globally and will continue to enforce a negative on influence **skin cancer incidence** for many decades to come.

RESPIRATORY HEALTH

There is a direct and indirect impact of climate change on **respiratory diseases** and there is also synergistic effects of heat, air pollution, and aeroallergens that cause **excess mortality and hospital admissions** for allergic respiratory diseases e.g. asthma, rhinitis, hay fever) and those with chronic respiratory diseases like COPD

PREGNANCY OUTCOMES

Air pollution is linked with an increased risk of **low birth weight** and **preterm birth.** In 2019, it was estimated that **476,000 infants died** in their first month of life from health effects **associated with air pollution exposure.**

MENTAL HEALTH

Climate change-related events elevate rates of anxiety and mood disorders, acute stress reactions and post-traumatic stress disorders, sleep disruption, suicide and suicidal ideation, as well as a decreased sense of self and identity from loss of place and grief reactions

CARDIOVASCULAR HEALTH

Short-term exposures to air pollution over a few days increases the risk for a variety of acute cardiovascular events (e.g., myocardial infarctions, heart failure exacerbations, and strokes) and living in more polluted regions over several years **increases cardiovascular morbidity and mortality** by an even larger degree

GASTROINTESTINAL HEALTH

Global climate change is expected to affect **waterborne enteric diseases**, including diarrhoea-associated diseases, which is one of the primary causes of morbidity and mortality globally

Source: Rapid evidence review of the health impacts of climate change (London Climate & Health Network, summer 2022)

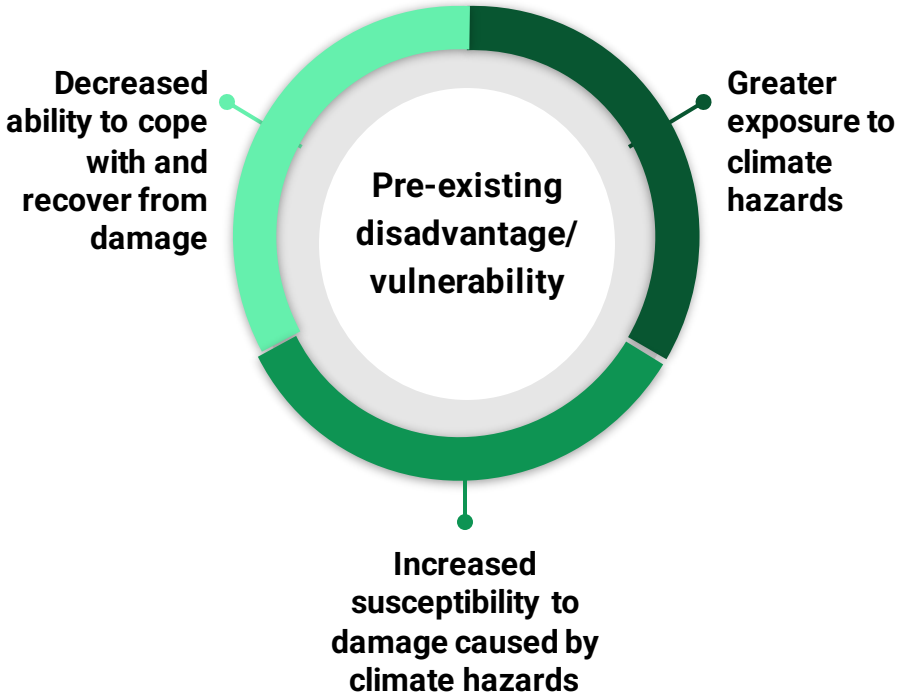
CLIMATE JUSTICE

Many of these health problems are not new, but they are unequally distributed and are made worse by climate change.

The climate crisis will continue to affect different people and places differently, creating and widening inequalities within and across nations, and between current and future generations - so creating injustice.

Climate justice means *ensuring that collectively and individually we have the ability to prepare for, respond to and recover from climate change impacts – and the policies to mitigate or adapt to them – by considering existing vulnerabilities, resources and capabilities.*[1]

[1] Banks. N et al (2014) *Climate change and social justice: An evidence review.* JRF, York.



SOCIAL VULNERABILITIES TO CLIMATE CHANGE

SOCIAL VULNERABILITY

Personal (e.g. age and health) - affect susceptibility to climate impacts

Environmental (e.g. availability of green space, quality of housing stock or elevation of buildings) - influence exposure to climate hazards

Social and institutional (e.g. income, social networks and cohesion, institutional practices in care homes etc) - affect ability to adapt

HIGHER RISK GROUPS

Older people, the very young and people in poor health - greater physical susceptibility

People living in neighbourhoods at increased exposure to climate impacts like floods and heatwaves

People living in particular types of housing (e.g. flooding risk in basements, heat stress risks in high rise blocks)

People on low incomes/living in socially deprived circumstances - limited resources to prepare for, respond to, and recover

Source: Adapted from Climate Just

1b. CLIMATE ACTION AND HEALTH CO-BENEFITS

CLIMATE CHANGE MITIGATION AND ADAPTATION

MITIGATION

Transitioning from reliance on fossil fuels to use of clean, renewable energy - **action to make the impact of climate change less severe**

Reduce greenhouse gas emissions from:

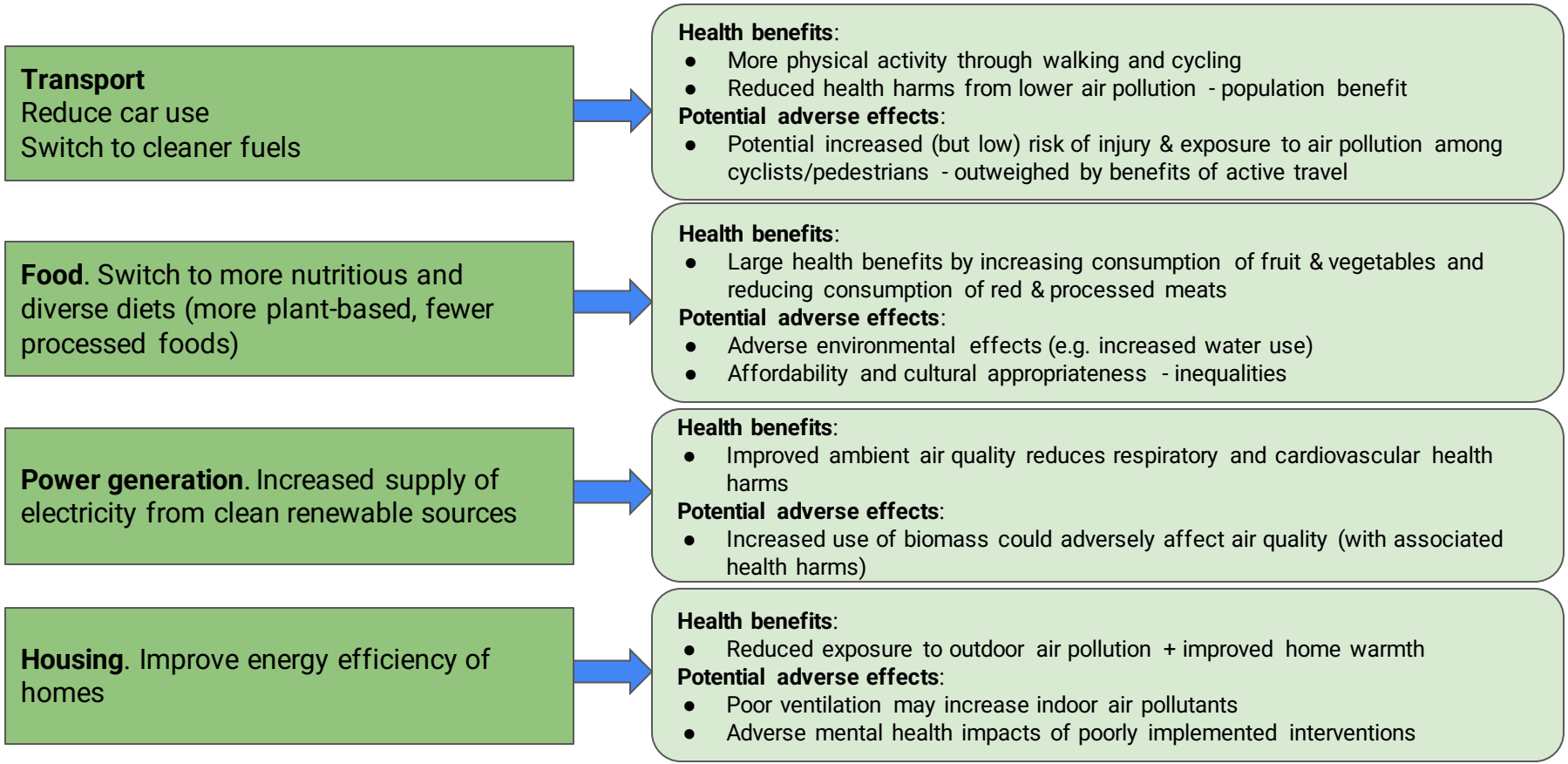
- transport
- food & agriculture
- energy & industry
- housing

ADAPTATION

Solutions that help us adapt to life in a changing climate - **steps to protect people from current and future impacts**

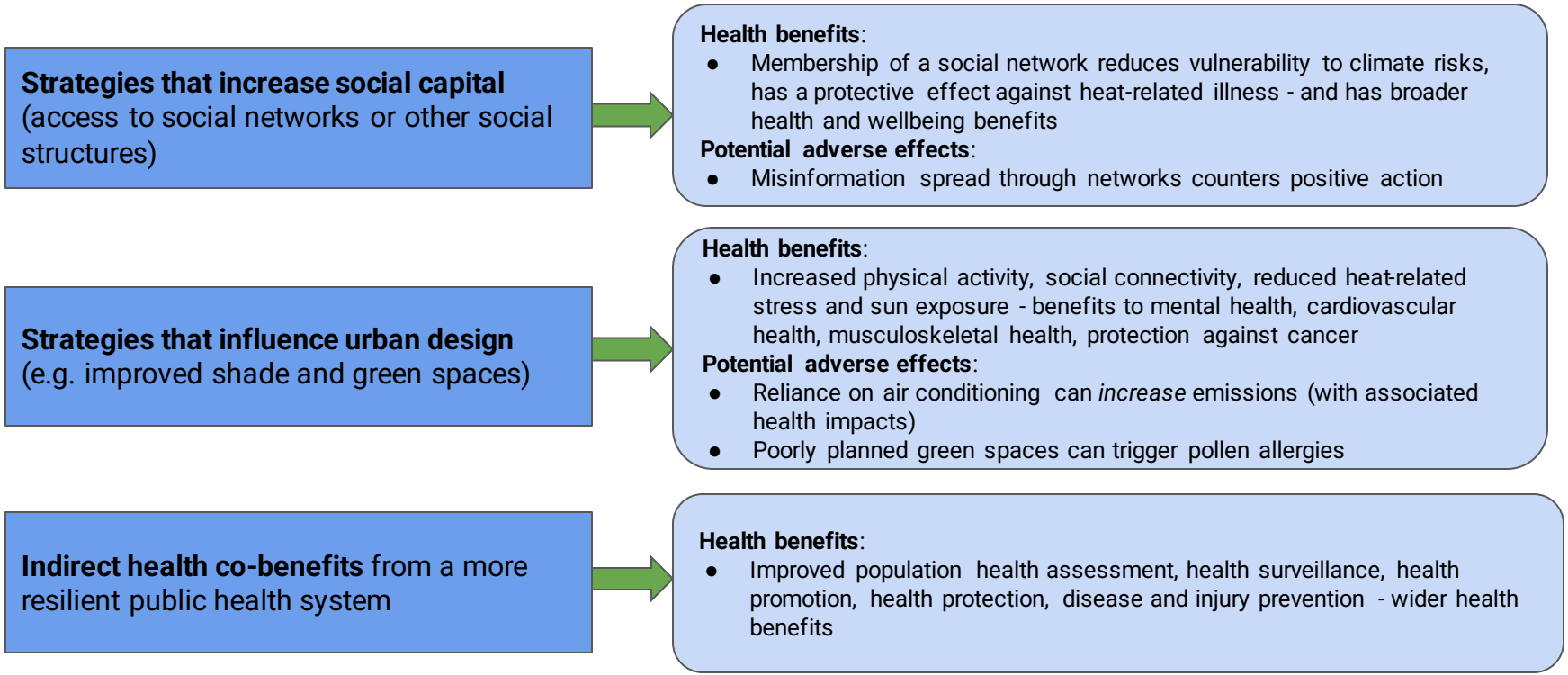
Adverse weather plans
Climate resilient buildings & transport infrastructure
Resilient supply chains
Cool public spaces
Sustainable drainage systems
Disease surveillance
Air quality alert systems

HEALTH CO-BENEFITS OF CLIMATE CHANGE MITIGATION



Source: Milner et al, Health benefits of policies to reduce carbon emissions, *BMJ* (2020)

HEALTH CO-BENEFITS OF CLIMATE CHANGE ADAPTATION



Source: Chen & Berry, Health co-benefits and risks of public health adaptation strategies to climate change: a review of current literature, *In J Public Health* (2013)

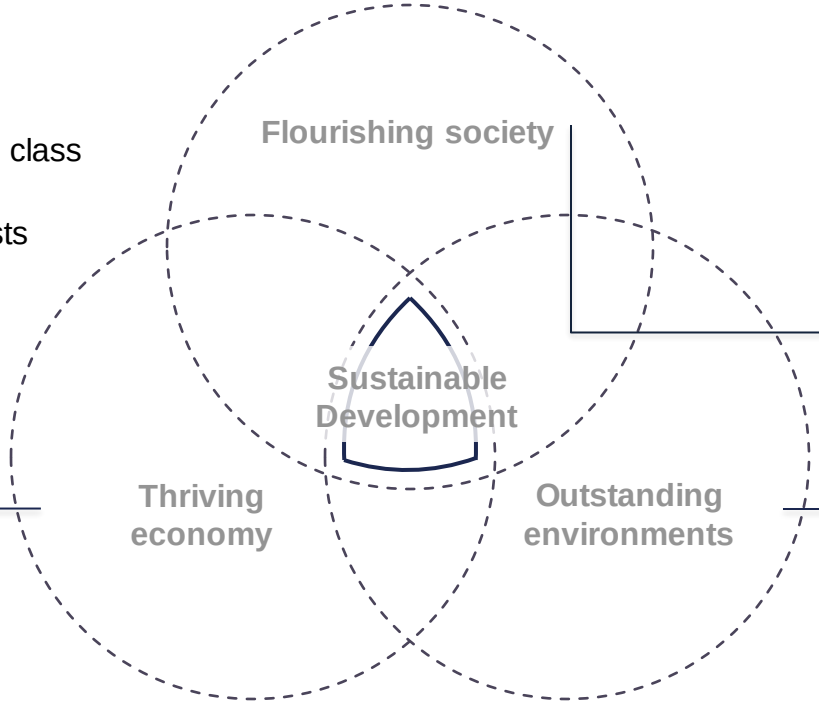
City of London Corporation Climate Action Strategy

2020-2027

Climate Action contributes to the City Corporation's aims

- Alleviate fuel poverty
- Protect health & wellbeing

- Promoting a world class financial centre
- Mitigate future costs
- Efficient job creation



- Improve Air Quality
- Conserve & enhance Open Spaces & biodiversity

The City Corporation has committed to achieving...

Four objectives

Net zero by 2027

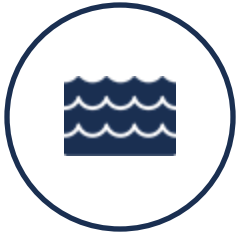
in the City Corporation's operations

Net zero by 2040

across the City Corporation's full value chain

Net zero by 2040

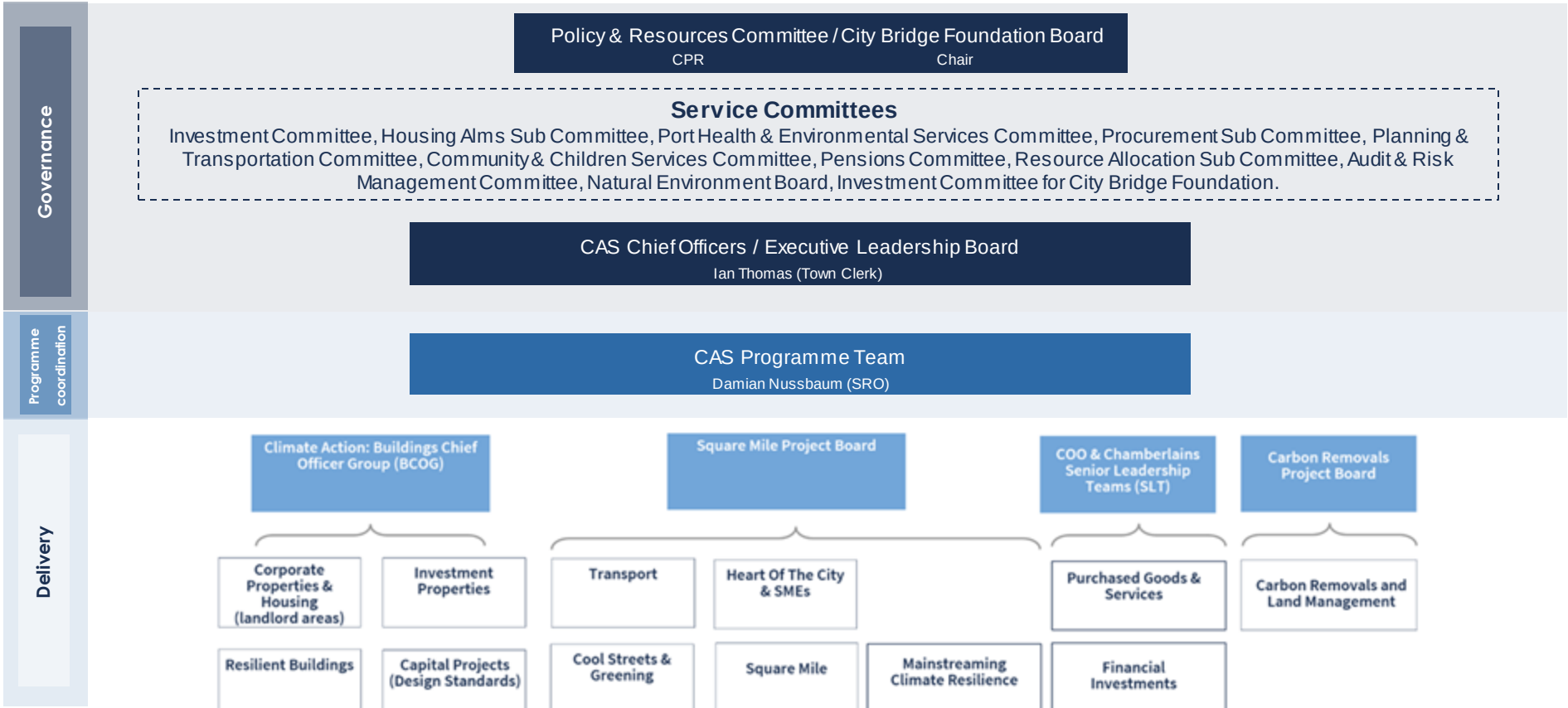
in the Square Mile



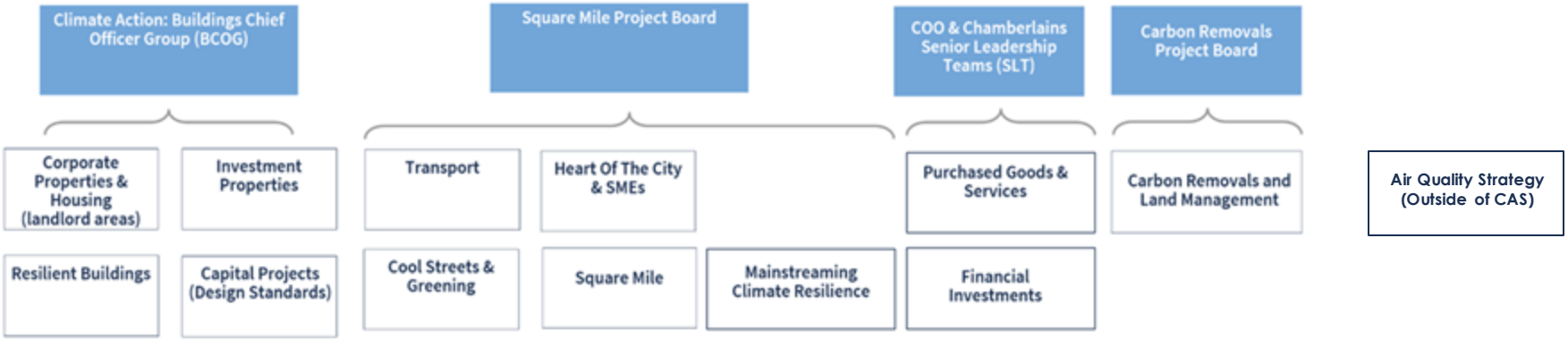
Climate Resilience

Climate resilience in our buildings, public spaces and infrastructure

Climate Action Programme Governance



CAS - Public Health Co-benefits



Resilient Buildings

- Retrofitting and improving standards can improve employee health and air quality for occupiers.
- Reduces risk to extreme cold and heat - reduced stress on NHS during extreme weather events.
- Reduction of fuel poverty for residents.

Transport

- Encouraging active travel options (walking & cycling) within Square Mile.
- Reduction of car use improves air quality and public health.
- Reducing incidents of traffic accidents with pedestrian priority streets and wider pavements.

Cool Streets & Greening

- Some schemes partially co-funded with Healthy Streets.
- Urban greening core element of Healthy Streets Approach.
- Direct links to physical & mental health improvements.
- Reducing risk during extreme heat events, reducing NHS demand.
- Reducing flood risk and associated public health impacts.

Mainstreaming Climate Resilience

- Increased co-operation and data sharing across City Corporation and with health partners.
- Horizon scanning and early warnings strategy for pests and diseases, reducing risk of public health disease outbreaks.
- Ensuring a fair and equitable transition to climate resilient city.

Air Quality

- Reducing local carbon emissions can have benefits for air quality.
- Direct measures and strategies to improve air quality and public health.
- Co-operation and data sharing across all stakeholders.
- Community engagement to drive positive health outcomes.

Environmental Resilience

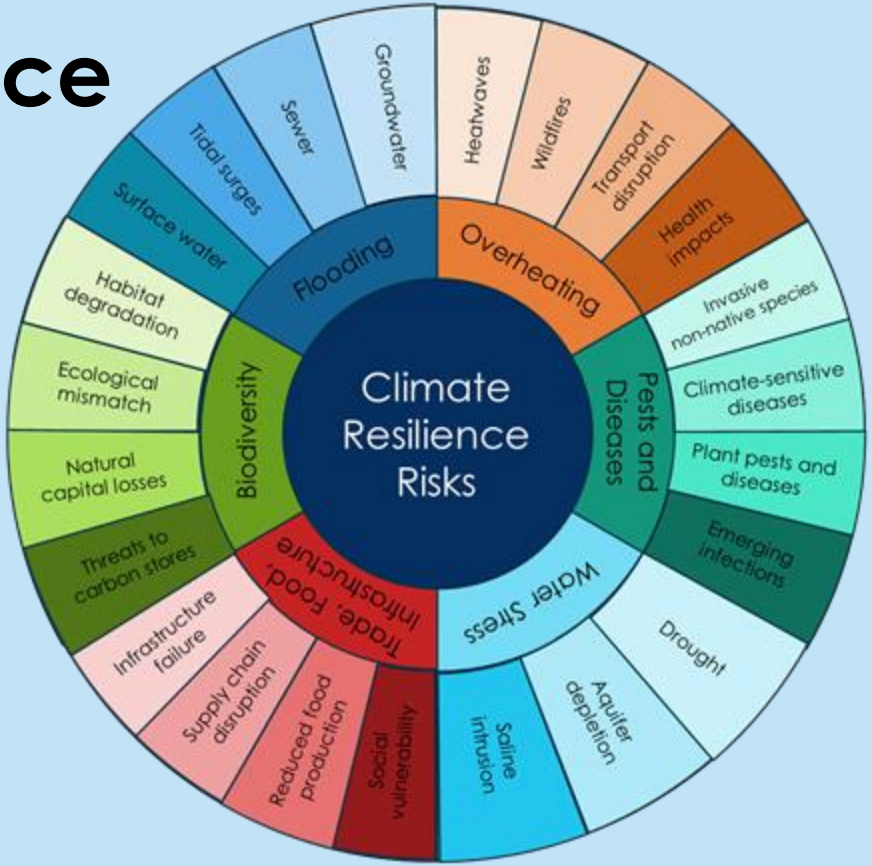
Environmental Resilience

The Environmental Resilience Team is responsible for:

- Climate Action Strategy leads:
  - Mainstreaming Climate Resilience
  - Cool Streets and Greening
- Local Flood Risk Management Strategy.

Public health threatened by all major climate risks. At the core of climate adaptation and resilience measures.

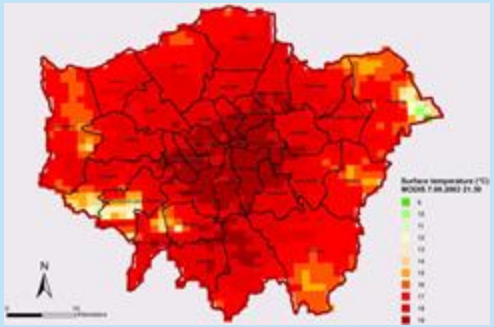
- Effects of extreme weather, overheating, flooding, drought.
- Effects on planet's life support systems.
  - Biodiversity loss, water availability, disease, food shortage.
- Effects mediated by social systems
  - Supply chain disruption, healthcare pressure, food and fuel.



City of London climate resilience risk wheel showing the six risks and their manifestations

Resilience & Health – Progress to Date

- Heat risk mapping for Square Mile.
    - Approaches must accommodate unique demographic structure within the Square Mile - unique v ulnerabilities.
- Temperature sensor network installation - localised data for research and collaborativ e planning.
    - Can we use this data to identify priority groups or places?
- Cool Streets and Greening programme.
    - Street tree planting and SuDs planting schemes – 100 plus trees. Co - benefits of healthy streets.



Pest and Diseases – Progress to Date

Horizon Scanning has identified four acute pests and diseases risk categories:

- Emerging Infections
- Rise in climate sensitive diseases
- Plant pest and diseases
- Invasive non-native species

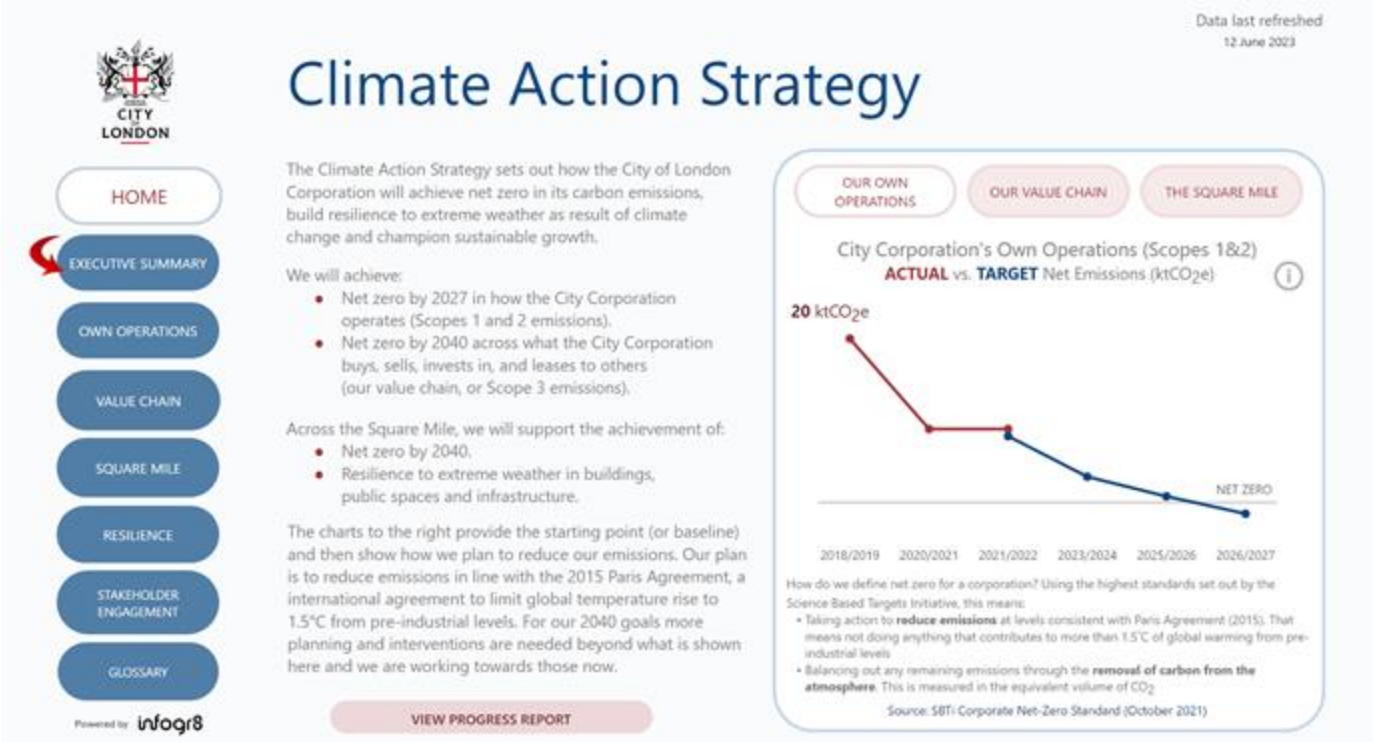
Unique public health challenges for the Square Mile and responsibilities for the City Corporation:

- Dynamic workday population can exasperate these risks – public protection issues
- London Port Health Authority – Food & feed import monitoring.
- Heathrow Animal Reception Centre – Animal Border Control Post, increased biosecurity pressures.
- 4,500 hectares of land under the management of the City Corporation. Vulnerability and opportunity to improve public health.

How can the City Corporation lead on public health planning to manage these specific vulnerabilities?

The power of transparency

Climate Action Strategy Dashboard



SCAN ME

North East London Health & Care Partnership

North East London ICS Green Plan 2022 – 2025

Our journey towards a net zero health & care system

North East London Health and Care Partnership is our integrated care system, which brings together NHS organisations, local authorities, community organisations and local people to ensure our residents can live healthier, happier lives.

North East London Health & Care Partnership

The role of the North East London ICS

- Identifying at scale transformation to meet net zero targets
- Hosting system wide forums on Green Plan themes
- Providing system wide training and development
- Taking collaborative action on climate change to reduce health inequalities
- Supporting Primary Care to reduce its carbon footprint
- Developing an Air Quality Programme.

Click here to read the NEL ICS Green Plan

The challenge

NHS is 5% of UK carbon footprint.

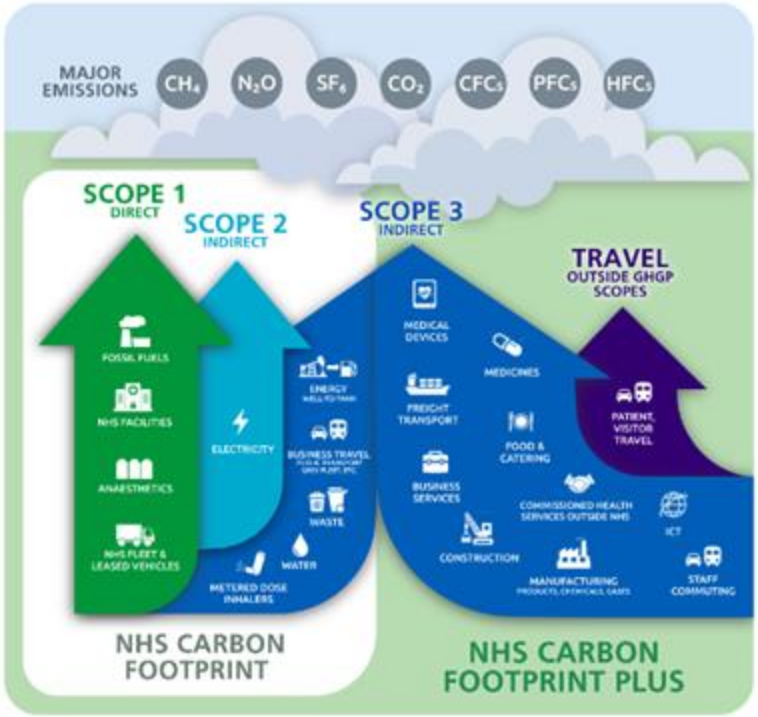
<u>NHS Carbon Footprint- our direct emissions</u>

- **40% reduction by 2025**
- An 80% reduction by 2028-2032
- Net zero by 2040

<u>NHS Carbon Footprint Plus- entire emissions</u>

- An 80% reduction by 2036-2039
- Net zero by 2045

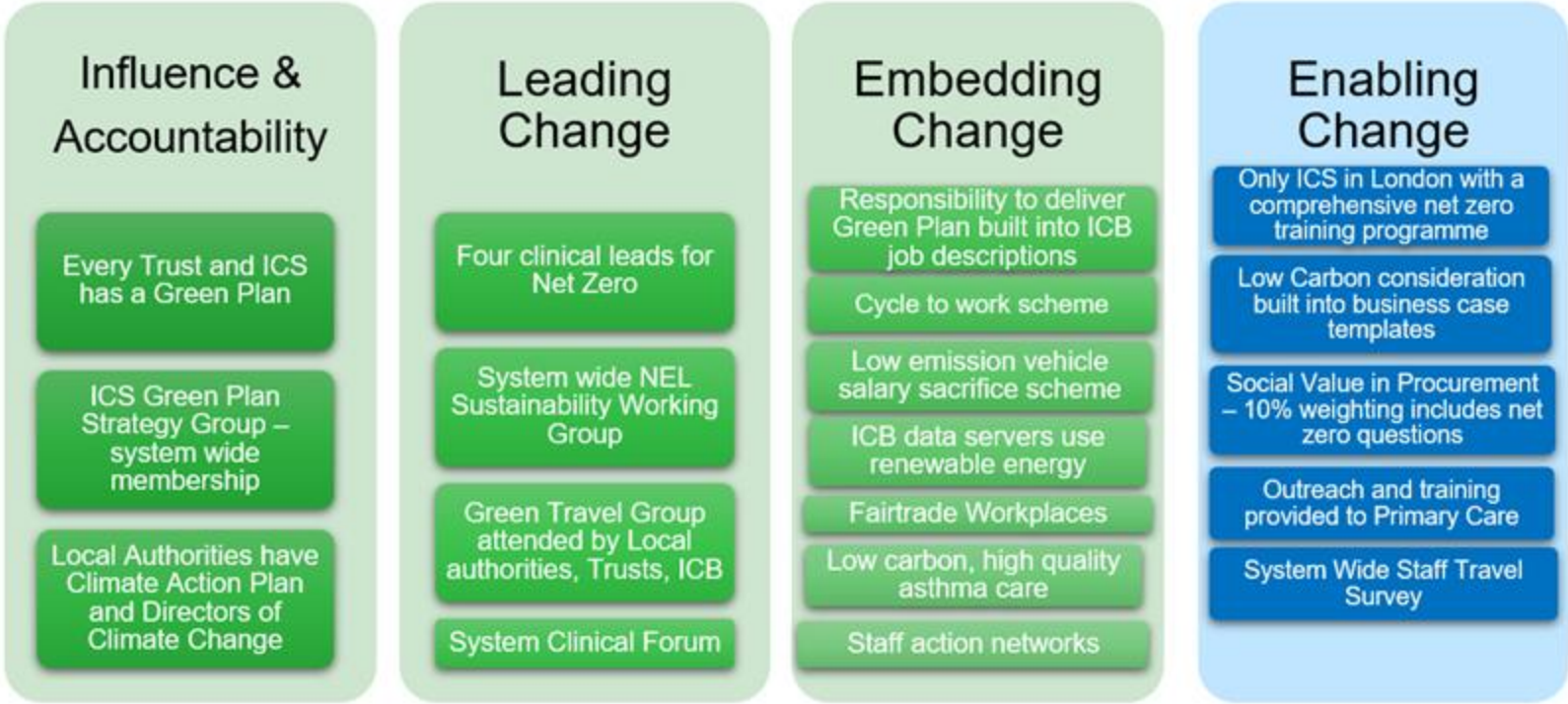
($MtCO_2e$)	November 202	80% reduction by 2028 would bring us to
Carbon Footprint	136,420	27,284
Carbon Footprint Plus	847,450	169,490



Source Delivering a 'Net Zero' National Health Service (scopes on page 12)

The NEL ICS Green Plan Programme Overview

North East London Health & Care Partnership



Celebrating success

Investing in collaborative action on climate change in North East London

Challenge	Delivering year one of the NHS North East London Integrated Care System Green Plan
Assessing the scale	✓ We held co-production workshops to listen to what key stakeholders wanted in each chapter ✓ Identified the common themes in the system ✓ Learnt the challenges in the system; multiple landlords in primary care, capital allocation policy limits the ability for NEL to invest, data that we don't have ✓ Learnt about the infrastructure and the behaviours required that needed to change ✓ Set up subject matter expert subgroups: Inhalers, Anesthetics, Active Travel, Clinical Forum. ✓ System Wide Strategy Group oversees Green Plan delivery
Impact	✓ Massive drop in inhaler emissions ✓ 311 primary care professionals attended our Green Primary Care webinars, or watched them back - hosted by Net Zero Clinical Leads ✓ Funded 16 places on the RCGP Health Creation Scholarship ✓ Hosted system-wide Clean Air Day roundtable ✓ 204 staff across ICS attending carbon literacy courses.
Lessons	✓ Our central role is to take the system on a journey to net zero – sharing and galvanizing ✓ We can source external funding to seed fund innovation ✓ Train staff on the connection between climate change and health outcomes is vital ✓ Medicines Optimisation Teams are key! Deprescribing and tackling medicines waste is most important
Social or financial impact, March 2022 – June 2023	✓ High carbon inhaler reduction = 952 tonnes CO2e saving ✓ Desflurane eliminated = 43.4 tCO2e saving (2.15% to 0%)
What was innovative	✓ Net Zero Clinical Leads - funded four GPs 1 session a week ✓ Focused ICB efforts on Primary Care from inception of Green Plan ✓ Green Travel subgroup has excellent Local Authority engagement ✓ ICB funded a Nature Recover Ranger in Homerton Hospital to increase biodiversity and provide spaces for staff and patient wellbeing activities.

North East London Health & Care Partnership

952 tonnes Co2e reduction SABA inhalers in Q1 2023/24!

Free places on sustainable healthcare training for all everyone working NEL ICS

North East London Health & Care Partnership

Introduction to Sustainable Healthcare

21 November (Tues) 13.00-17.00

Green Space and Health

23 November (Thur) 13.00-17.00

Some of our courses have ended, or are full, please use the sign up form to put your name on the waiting list so we can manage demand, or give you a place if we have cancellations.

CURRENT AND POTENTIAL PARTNERSHIP OPPORTUNITIES

Current

- City of London reps attend the NEL Green Travel Group to co-design interventions that increase active travel amongst staff and patients and work collaboratively
- DEFRA Air Quality Project

Potential

- Further develop Air Quality Programme to reduce the high rates of deaths in North East London
- Use overheating patterns and alerts to manage demand on health system - improved data sharing.
- Advise those with long term conditions how to manage their health during heat waves to improve health outcomes and reduce pressure on services
- Incorporating climate risks and health opportunities into Health and Wellbeing Strategy.
- Develop and public health approach to pests and diseases risk management and adaptation.

3. OPPORTUNITIES FOR (FURTHER) LOCAL COLLABORATION - DISCUSSION

QUESTIONS FOR DISCUSSION

1. Where are the greatest opportunities for (further) collaboration to maximise the collective impact of our climate action to protect and improve population health (and reduce health inequities) in the City of London?

1. Do we have a comprehensive understanding of the current/future population health impacts of the climate crisis in the City, and the potential health co-benefits of local climate action?

   2.1. Do we currently have the data/tools/skills to effectively measure these?